

Appln No. 10/754,453
Amdt date October 16, 2006
Reply to Office action of July 14, 2006

REMARKS/ARGUMENTS

As a preliminary matter, applicant submitted certified copies of three priority documents on June 11, 2004. Specifically, applicant submitted certified copies of Japanese Patent Application No. 2003-003047 which was filed on January 9, 2003, Japanese Patent Application No. 2003-363591 which was filed on October 23, 2003, and Korean Patent Application No. 2003-0097895 which was filed on December 26, 2003. The examiner has not yet acknowledged receipt of the certified copies of these priority documents, and applicant hereby requests that the examiner acknowledge receipt.

In the Office action dated July 14, 2006, the examiner rejected claims 1-17 under 35 U.S.C. § 103(a) as allegedly obvious over Kang, et al. (U.S. Patent No. 6,783,897). In so rejecting, the examiner appears to assert that the cross-linking agent in Kang is akin to the polyether modified silicon oil recited in the claims. However, the cross-linking agent in Kang consists of a polymethyl siloxane backbone with terminal Si atoms bonded to acryl groups. Column 4, lines 30-46. In contrast, the polyether-modified silicon oils represented by Formulae 1 and 2, recited in independent claims 1 and 6 contain terminal Si atoms bonded to polyether groups.

In addition, applicant has amended independent claims 10 and 14 to recite that at least one end Si atom includes a terminal bond to a polyether group. As noted above, Kang fails to teach or suggest such a feature. Accordingly, independent claims 1, 6, 10 and 14, and all claims dependent therefrom, including claims 2-5, 7-9, 11-13 and 15-17, are allowable over Kang.

The examiner also rejected claims 1-17 under 35 U.S.C. § 103(a) as allegedly obvious over Noda, et al. (JP 2003229019). Applicant has obtained a full English translation of this reference, a copy of which is submitted in an Information Disclosure Statement filed concurrently with this amendment. Noda discloses an electrolyte having a first cross-linkable compound, a second compound and a third compound with a larger molecular weight than the second compound. The second compound is a siloxane derivative. However, the siloxane derivative disclosed in Noda does not satisfy Formulae 1 and 2 recited in independent claims 1

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and 6. Formulae 1 and 2 of independent claims 1 and 6 require at least one terminal silicon atom of the polyether-modified silicon oil to have a terminal bond to a $-(\text{CH}_2)_m\text{-O-(C}_2\text{H}_4\text{O)}_n\text{-Z}$ group in which Z is either CH_3 or C_2H_5 . In contrast, the end silicon atom in the siloxane derivative disclosed in Noda has a terminal bond to a $-\text{CH}_2\text{-CH}_2\text{-CH}_2\text{-O-(CH}_2\text{CH}_2\text{O)}_p\text{-(C}_3\text{H}_6\text{O)}_q\text{-R21}$. Because the terminal group disclosed in Noda is different from that recited in independent claims 1 and 6, and because Noda fails to disclose the terminal group recited in claims 1 and 6, those claims, and all claims dependent therefrom, including claims 2-5 and 7-9, are allowable over Noda.

In addition, independent claims 10 and 14 recite a polyether-modified silicon oil having a viscosity of less than 10cSt. Noda fails to teach or suggest such a feature. The low viscosity of the polyether-modified silicon oil recited in the claims of the present application imparts improved ionic conductivity. Accordingly, independent claims 10 and 14, and all claims dependent therefrom, including claims 11-13 and 15-17, are also allowable over Noda.

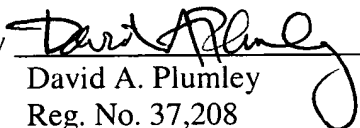
Finally, the examiner rejected claims 1-17 under 35 U.S.C. § 103(a) as allegedly obvious over Horie (JP 2003142157). Applicant has also obtained a full English translation of this reference, a copy of which is also submitted in an Information Disclosure Statement filed concurrently with this amendment. Horie discloses an electrolyte having a siloxane derivative. However, like the siloxane derivative disclosed in Noda, the siloxane derivative disclosed in Horie does not satisfy Formulae 1 or 2 recited in independent claims 1 and 6 of the present application. Formulae 1 and 2 of independent claims 1 and 6 require at least one terminal silicon atom of the polyether-modified silicon oil to have a terminal bond to a $-(\text{CH}_2)_m\text{-O-(C}_2\text{H}_4\text{O)}_n\text{-Z}$ group in which Z is either CH_3 or C_2H_5 . In contrast, the end silicon atom in the siloxane derivative disclosed in Horie has a terminal bond to a $-\text{CH}_2\text{-CH}_2\text{-CH}_2\text{-O-(CH}_2\text{CH}_2\text{O)}_q\text{-(C}_3\text{H}_6\text{O)}_r\text{-R}_2$ group. Because the terminal group disclosed in Horie is different from that recited in independent claims 1 and 6, and because Horie fails to disclose the terminal group recited in claims 1 and 6, those claims, and all claims dependent therefrom, including claims 2-5 and 7-9, are allowable over Horie.

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In addition, independent claims 10 and 14 recite a polyether-modified silicon oil having a viscosity of less than 10cSt. Horie fails to teach or suggest such a feature. Accordingly, independent claims 10 and 14, and all claims dependent therefrom, including claims 11-13 and 15-17, are also allowable over Horie.

Claims 1-17 remain pending in this application. Applicant has amended claims 10 and 14. In light of the above amendments and remarks, applicant submits that all of pending claims 1-17 are in condition for allowance. Applicant therefore respectfully requests a timely indication of allowance. However, if there are any remaining issues that can be addressed by telephone, applicant invites the examiner to contact applicant's counsel at the number indicated below.

Respectfully submitted,
CHRISTIE, PARKER & HALE, LLP

By 
David A. Plumley
Reg. No. 37,208
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